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The English Organ of a Hundred Years Ago

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APRIL 16, 1907.

W. H. CUMMINGS, Esq., Mus D., F.S.A.,

VICE-PRESIDENT,

IN THE CHAIR.

THE ENGLISH ORGAN OF A HUNDRED
YEARS AGO.

BY CHARLES W. PEARCE, MUS.D. CANTAB, F.R.C.O.

PERHAPS no musical instrument has been subjected to greater constitutional changes during the last hundred years than has the English organ—in the various directions of size, compass of key-boards, character of stops and methods of controlling their use, and last (but not least) its system of tuning. Changes are still being made, even to the extent of affecting the uniformity of those “playing arrangements” which the College of Organists endeavoured to regulate, systematize and *settle* more than a quarter of a century ago. It is an open question if the organ is being developed at the present time upon logical and really artistic lines, as a musical instrument deserving a separate and individual existence of its own; or whether it is daily becoming a merely servile (and therefore a *degraded*) mechanical imitation of the orchestra. It may help us to see more clearly in which direction we are *now* moving if we turn our thoughts back to the English organ of the first decade of the nineteenth century—when it was a comparatively small instrument, but one with a character all its own, and in many ways admirably adapted to fulfil the one great purpose of its existence—the accompaniment of the human voice. In making the retrospective survey to which I have the privilege of

drawing your attention this afternoon, I have been materially assisted from three different sources of information :—

(1) A manuscript account of English organs, by Mr. Henry Leffler, organist of S. Katherine's Chapel, Regent's Park, written between the years 1800 and 1810, which contains upwards of 300 specifications of organs as the writer found them. This book has been kindly lent to me by Mr. William Windsor.

(2) Another manuscript account of English organs, written about the year 1850 by Mr. J. W. Billingham, Vestry Clerk of S. Margaret's, Lothbury. This book was given to me by the writer on his death-bed a few years ago.

(3) Many interesting conversations on organs which I have enjoyed with Mr. F. W. Jardine, our oldest living organ-builder.

The first thing which strikes one is the *extreme smallness* of the English organ of a century ago as compared with the size of organs then existing on the Continent. You will all remember that Dr. Burney, in his 'German Tour' (published 1773), constantly speaks of the *large* organs he found abroad. There were, for example, those in :—

The Old Kerk at Amsterdam and S. Michael's, Hamburg, each containing sixty-four stops; the Cathedral of S. Bavon, Haarlem, with sixty stops; the Dominicans' Church, Antwerp, the Frauen Kirche, Dresden, and S. Martin's Church, Groningen, each containing fifty-four stops, and so on.

In 1807 our two largest cathedral organs were S. Paul's and York Minster, each containing twenty-seven stops; Canterbury came next with twenty-four; Durham, Lichfield, Rochester and Salisbury could each boast of twenty-three; the cathedrals of Bristol, Dublin (S. Patrick's), Hereford, Wells, Winchester and Westminster Abbey were each contented with twenty-two stops; Cork had twenty-one; Chichester, Exeter, Gloucester and Norwich had twenty each; the rest had less than twenty. Mr. Leffler makes no mention of pedals in connection with the cathedral organs at Bristol, Canterbury, Carlisle, Chester, Chichester, Durham, Ely, Exeter, Gloucester, Lincoln, Norwich, Oxford, Peterborough, Wells, Winchester and Worcester.

Like the present, the age was not then remarkable for the number of its really distinguished cathedral organists; but it is at least worthy of attention that the largest organs of that day had the best musicians to preside at them. At any rate, S. Paul's could boast of Attwood, York had Camidge, Samuel Spofforth was at Lichfield, Arthur T. Corfe at Salisbury, Chard was at Winchester and Robert Cooke at Westminster.

The only organs to be found in England outside cathedrals and churches, were the small instruments built for theatres and

concert-rooms. The little one-manual organ, by Jordan, burned with the old Theatre Royal, Covent Garden, in 1808, contained seven stops only, one of which was a trumpet. The organ which replaced it in the new theatre in 1809 was by Russell; it also had seven stops, but there was no reed. An organ by Allen, built in 1810 for the oratorio performances at Covent Garden Theatre, had only one "sett of keys" with eight stops, but one of these was an oboe from middle C upwards, enclosed in a Swell box. Drury Lane Theatre possessed an eleven-stop organ, built in 1769 by Byfield and Green; its four swell stops were played upon from the single (Great) manual; it cost £180, and was burned with the theatre in February, 1809. Samuel Green's organ built in 1794 for the concert-room at the Opera House, had two key-boards and fifteen stops, seven of which were on the Swell, which went down to Tenor F. Elliott's eleven-stop organ, built in 1804 for the Hanover Square Concert Rooms, had three on the Swell, and boasted of as many as nineteen pedal pipes; it cost £700. The same builder erected in 1811 a six-stop one-manual organ for the private music-room of Mr. Fritch, the then organist of All Saints' Church, Derby; this instrument had a general Swell and was enclosed in an 'elegant mahogany case'.

The *largest organ* in England at that time was in Christ Church, Spitalfields; it was originally built by Richard Bridge in 1730 for the sum of £600, and contained thirty-four stops. Here is its specification as given by Mr. Leffler:

"Three setts of keys, Great and Choir, from GG long octaves (*with* GG#) to D, 56 notes. Swell Fiddle G to D, 32 notes. A C Drum Pedal with 4 pipes.

"**GREAT** (16 stops).—Open Diapason No. 1; Open Diapason No. 2; Stopped Diapason; Principal No. 1; Principal No. 2; Twelfth; Fifteenth; Tierce; Larigot; Sesquialtera V. ranks; Furniture III. ranks; Cornet V. ranks, from Middle C# upwards; Bassoon; Trumpet No. 1; Trumpet No. 2; Clarion.

"**SWELL** (9 stops).—Open Diapason; Stopped Diapason; Principal; Flute; German Flute; Cornet III. ranks; Trumpet; Hautboy; Clarion.

"**CHOIR** (9 stops).—Flute to C *fa ut*; Stopped Diapason; Principal; Flute; Fifteenth; Mixture III. ranks; French Horn (to Tenor D); Cremona; Vox humana. *A very fine organ all through.*"

A Swell of nine stops, even though it began on Fiddle G, must have been a great luxury a century ago; for the Swell at S. Paul's Cathedral, although it began a fifth lower (on Tenor C), had only six stops. But this was greatly in

advance of many other cathedral organs in the country. Those at Chester, S. David's, Ely, Lincoln, Norwich, Christ Church (Oxford), Worcester, and S. Patrick's, Dublin, had no swell at all; in spite of the fact that the swell had been invented and first applied by Abraham Jordan to the organ at S. Magnus, London Bridge, nearly a century previous, viz., in 1712. Little wonder, then, that Burney, writing in 1773, said that in Amsterdam "the organists have just heard of such a thing as a swell in an organ, but it is difficult to make them comprehend, by description, its construction and effect." At Berlin he inquired "in vain of musical people whether they knew of any such machine as a swell worked by a pedal in any of their organs; no such contrivance had ever been heard of, and it was difficult to explain it." This, too, was after Handel had asked Snetzler to send to a friend of his in Berlin a written description of the manner in which the swell was produced, and Snetzler had informed Burney that he had complied with Handel's request.

Venetian swell shutters were only just coming into use a century ago: Dr. Hopkins tells us that they are not to be found amongst Green's latest work, but that they are constantly to be met with in old organs by England and Avery. Consequently the "nag's head" must have been very much in evidence. This, as you know, was the "swell" invented by Jordan, who substituted a sliding shutter like a sash-window for the fixed front of the box which formerly contained the pipes of the "Echo" organ.

Frequently when a Swell was added to an older organ which had previously consisted of Great and Choir only, expense was spared by making the Choir keys act upon the Swell stops. Father Schmidt's organ in S. Katherine Cree, Leadenhall Street, retained its two "setts of keys" in this way so recently as 1864. Sometimes the later builder who added the Swell got as many of the previously existing Choir pipes as he could into his Swell box. Thus, in the case of Renatus Harris's organ at S. Dunstan's, Stepney, we find that in 1807 the whole of the original Choir pipes were located in the Swell box with the exception of the basses of the Stop Diapason, Principal, and Vox Humana, and the entire Flute stop. A favourite device of the old builders—Renatus Harris in particular—was to make the lower portion of a stop (or even an entire stop) act upon two different key-boards "by communication" as it was called. Harris "borrowed" some of his Choir stops from the Great at S. Andrew's, Holborn, in 1699, and in many other organs as well; the younger Harris did the same at S. Dionis Backchurch in 1722, and Bridge at S. Bartholomew the Great, Smithfield, in 1731.

Sir John Sutton (author of "A short account of organs built in England from the Reign of King Charles II. to the present time") was the possessor of a chamber organ of exquisite tone built by Father Schmidt. It had two rows of keys (Great and Choir) and six stops, three on each manual. The Choir Organ had an Open Diapason, Stopped Diapason, and a Principal, *all made of oak*, and of extreme delicacy and beauty. The Great had a Stopped Flute, Fifteenth, and two-rank Mixture, *all of metal*. The Choir Stopped Diapason could be played upon the Great by borrowing, and there was a coupler to unite the two manuals.

Mr. Leffler was of opinion that "one of the best Swells in London" in the year 1800 was that added by Byfield (with a keyboard of its own) to Father Schmidt's organ at S. Dunstan's in the East, Tower Street. This Swell began at Fiddle G, and consisted of only five stops, viz.:—Open Diapason; Principal; III. rank Cornet; Trumpet; Hautboy. In the great majority of English organs, a century ago, the number of stops assigned to the Swell could only be said to be about one-half the number of those assigned to the Great. At the Church of S. Maurice, Winchester, however, during the organistship of Dr. Chard, we find a Swell of six stops added to a Great of Father Schmidt's, which consisted of seven stops. In the Chapel of S. Mary's College, Winchester (where Dr. Chard was also organist), Samuel Green added in 1786 a Swell of five stops to an organ which already contained a Great of five stops and a Choir of four. Green was also the maker of the Swell which had the deepest compass in England in the year 1819; it went down to FF in the bass and had eight stops; it was in the organ of the Royal Hospital at Greenwich. Green must be credited with still greater efforts in the direction of swell extension and development, when we remember that at S. George's Chapel, Windsor, in the year 1807, the entire Great organ still remained within the "general swell" with which he had enclosed it in 1790.

On the other hand, we find from a note in Mr. Leffler's book that in 1800 the Swell at S. Margaret's, Westminster, which began at Middle C and had a separate "sett of keys" assigned to it, was "never us'd"! It may have been rendered unplayable by being extremely dirty. If so, the organ at S. Margaret's, Westminster, by no means stood alone in its neglect. Mr. Leffler speaks of Harris's organ in S. James's, Piccadilly, as being "worn out," and of Father Schmidt's organ in S. Olave's, Southwark, as being "*quite worn out*." Mr. Billingham states that when he visited Father Schmidt's organ at S. James's, Garlickhythe, on March 30th, 1856, he found the instrument almost (if not quite)

in its original state, with black naturals and white sharps, no couplers, no pedals, no "shifting movement" and with the wind supplied by two diagonal bellows. In fact, Mr. Billinghamurst's description of this organ in 1856 tallies so completely with that of Mr. Leffler written in 1800, that it is quite evident nothing of importance had been done to the organ for at least fifty-six years. In the *Musical Standard* for January 25th, 1868, Mr. A. W. Hammond describes the organ at All Hallows', Lombard Street, built by Renatus Harris in 1695, as standing in its original state, with only one manual, and with neither pedal board nor pedal pipes. But when we read that "the lady who was organist there for many years took very good care that no too-knowing strangers should invade the organ-gallery," we may cease to wonder at this strange neglect. Foreign as well as English organs were equally neglected. Burney states that in 1773 he found the organs in some of the principal churches of Leipsic "very fine, and very dirty"; but he adds as a reason that "in Charles the Fifth's time, before religious disputes were adjusted, a kind of truce was agreed upon between the Catholics and reformers under the title of *Interim*, which stipulated that the ornaments, &c., of the church, as well as some of the ceremonies should remain in *statu quo*, till by a general council religious peace should be finally concluded." Some such remarkable "reason" may possibly explain why the grand organ erected in the Abbey of Weingarten in 1752 had (according to the *Musical World* of July 26th, 1856) not been cleaned since its erection.

The next thing which strikes a present-day organist is the remarkable variation which existed a century ago in the *compass of organ key-boards*. Some instruments had "short-octave" GG manuals for Great and Choir; others had GG manuals with "long octaves." Some Great and Choir key-boards descended a note lower, to FF; others as low as CCC; whilst a fifth class began with the note *we* are so familiar with, viz., CC. We have already seen that the shorter Swell compass of those days varied quite as much as its companion key-boards.¹ What was the reason of all this variety? The answer is not difficult to give, but it requires close attention. Up to the time of the wholesale destruction of organs at the "Commonwealth" (1649-1660), and indeed until shortly after the Restoration of the Monarchy in 1660, the manual range generally consisted of four octaves, from CC to C⁸ in alt. In *The Connoisseur* for February, 1906 (p. 119), there is a photograph of an old chamber organ now in Great Cheshunt House, near London, an instrument which is

¹ Some organs had three manuals all of different ranges; amongst them were S. Paul's Cathedral, the German Lutheran Chapel, Savoy, and S. Mary Redcliffe, Bristol.

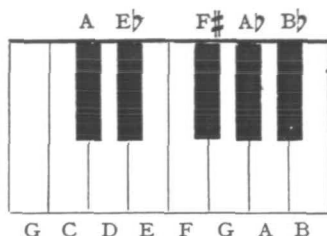
said to have been made by one of Cardinal Wolsey's monastic retainers; this has a four-octave compass from CC upwards. Previous to the year 1770, the one-manual organ in Wigan Parish Church, Lancashire (said to have been the work of Father Schmidt), had this same CC four-octave compass. At the beginning of the last century the organs at S. Margaret's, Westminster, and S. James's, Piccadilly, had the same compass, and (as we have already seen) the old organ built by Renatus Harris in 1690 for All Hallows', Lombard Street—where it was still standing in its original condition in 1868—had nearly the same compass; there being, however, in this last-named organ no CC♯, and the top note was D, not C.

The organ played upon by Handel, Worgan and others still remained in the Vauxhall Gardens a century ago. It was a one-manual with seven stops, having a compass from CC (without CC♯) to E in alt, *i.e.*, fifty-two notes. This historic instrument was either of so primitive a character, or in such bad repair, as to elicit from Mr. Leffler the following sarcastic remark: "built about six weeks after Adam was breeched."

With the restoration (more or less) of the choral service in the reign of Charles II., in which the unisonous plain-song of former times was happily superseded by vocal harmony, it was felt desirable—in the absence of both "pedal pipes" and 16-ft. stops on the manual—to have a soft manual bass going below CC, so as to duplicate the bass voice an octave lower than the vocal pitch. This will account for the notes GGG and FFF being found at the bottom of most Great and Choir organ key-boards a century ago; they represented the lowest notes of a bass voice doubled an octave below. Dr. Hopkins observes that these notes were more frequently than not played by using the pull-down pedal keys of the period, instead of being manipulated by the organist's left hand; because the ivories on these lower keys were found to be quite perfect, whilst most of the others belonging to the middle and upper portions of the same manual were much worn by constant use. But the addition of any notes lower than CC was found to be an expensive luxury, owing to the extra size and length of the pipes required for each stop. This expense had to be curtailed. Moreover, the "unequal temperament" which governed the tuning of those days made playing in certain keys absolutely intolerable by the production of "the wolf." Powerfully influenced as they were in both of these directions, the organ-builders—always an inventive and ingenious race—devised the compromise of *short octaves*, by means of which only *one* extra big pipe was required for each stop, and indeed only one extra key to the manual.¹ This additional key was

¹ See Hopkins and Rimbault, Original Edition, p. 203, § 887.

placed immediately to the left of the CC key, and had pipes sounding GG assigned to it. GG♯, AA♯, BB♭ and CC♯—four bass notes not often required under unequal temperament conditions—were left out, and pipes sounding AA were assigned to the CC♯ key, instead of those sounding its proper tone. The lowest manual keys stood thus under the “short-octave” system :—



the chromatic arrangement of the rest of the key-board being undisturbed.

The following was quite *the* favourite compass of those days : *Great* and *Choir* GG to d⁸ in alt, short octaves, 52 pipes to each stop. *Swell* Fiddle G (the lowest note of a violin), 32 pipes to each stop. The pedals, being mere “pull-downs” with no speaking pipes of their own, are seldom (if ever) mentioned in accounts of organs a century ago.

The compass just described was to be met with in the organs of Norwich and Chichester Cathedrals, S. John's College, Oxford, Doncaster Parish Church (Byfield), and a host of other important churches. That the Fiddle G Swell was not altogether confined to the performance of purely melodic passages can be clearly seen by the way in which the Swell is written for in the best organ music of the time. A voluntary in F by John Bennett, organist of S. Dionis Backchurch, 1752-1784, begins with an *Adagio* in four parts for the Swell, which is quite a complicated piece of contrapuntal writing. The following table will prove how well the builders of a century ago contrived to cut their coat according to their cloth, how well they cut it, and what a variety of ways and means were open to them.

The most extensive manual compass of a century ago which I have been able to discover is that of the organ built by Avery in 1786 for Colonel Lemon, and which now stands in the Private Chapel of Lord St. Levan's seat at S. Michael's Mount, Cornwall, having recently been restored by our member, Mr. Casson. Each *Great* and *Choir* stop had 65 pipes, which gave a compass from CCC to f⁸ (without CCC♯).

- 63 pipes gave CCC to d³ (with CCC \sharp), as at S. Mary Redcliffe, Bristol (Harris and Byfield, 1726).
- 60 " { CCC to c³ (no CCC \sharp), as at S. Paul's Cathedral (Schmidt).
FFF to f³ (no FFF \sharp), as at New College, Oxford (Dallam).
- 59 " { FFF to e³ (no FFF \sharp), as at Greenwich Hospital (Green, 1789).
GG to f³, as at Mr. Fritch's Music Room, Derby (Elliott, 1811).
- 58 " GG to f³, "long octaves" (no GG \sharp), as at S. Mary Aldermary (England, 1781).
- 57 " GG to e³, "long octaves" (no GG \sharp), as at S. Mary-at-Hill (Green, 1788).
- 56 " GG to d³, "long octaves" (with GG \sharp), as at S. Helen's, Bishopsgate (Griffin, 1744).
- 55 " { GG to e³, "long octaves" (no GG \sharp , BB⁷ nor CC \sharp), as at Wandsworth Parish Church (1800).
GG to d³, "long octaves" (no GG \sharp), as at Covent Garden Theatre (Jordan, 1808).
GG to f³, "short octaves," as at S. Mary-le-Bow, Cheapside (Russell, 1802).
- 54 " { FFF to c³, (no FFF \sharp), as in the *Choir* organ, S. Paul's Cathedral (Schmidt).
GG to d³, "long octaves" (no BB⁷), as at S. Mary Tower, Ipswich (Great) (Harris and Byfield).
AA to d³, "long octaves," as at Hereford Cathedral (Elliott, 1806).
- 53 " { AA to d³, "long octaves" (no BB⁷), as at S. Mary Tower, Ipswich (*Choir* organ).
GG to c³, "long octaves" (no GG \sharp), as at Whitehall Chapel (Schmidt, 1672).
- 52 " { CC to e³, (no CC \sharp), as at Vauxhall Gardens.
GG to d³, "short octaves" (in very common use).
- 51 " AA to d³, "short octaves," as at Danish Chapel, Wellclose Square (Schmidt).
- 50 " { CC to d³ (no CC \sharp), as at All Hallows', Lombard Street (Renatus Harris, 1695).
GG to c³, "short octaves," as at Christ Church, Oxford (Schmidt).
- 48 " CC to C, as at S. James's, Piccadilly (Renatus Harris, 1687).

These different ranges of manual compass apply only to the Great and Choir organs of the instruments referred to. It will be clearly observed that "*long octaves*" by no means meant "*complete octaves*." Long octaves only meant that at least *one* of the four notes omitted in the short-octave system was included in this longer compass.

The most extensive Swell compass mentioned by Mr. Leffler is that of the organ in Greenwich Hospital built by Green in 1789. It ran thus:—

48 pipes gave FF to e³

Other Swell manuals were thus limited :—

- 42 pipes gave Tenor C ("C fa ut") to f³, as at S. Ann's, Blackfriars (Gray, 1808).
- 37 " { Tenor F to f³, as at New College, Oxford (altered by Green).
 { Tenor C to c³, as at S. Paul's Cathedral (Crang).
- 36 " Tenor F to e³, as at Salisbury Cathedral (Green, 1792).
- 35 " { Fiddle G to f³, as at S. Martin Outwich (England, 1805).
 { Tenor E to d³, as at S. Dunstan, Stepney (Russell, 1807-8).
- 34 " { Fiddle G to e³, as at S. Michael, Queenhithe (England and
 Russell, 1779).
 { Tenor F to d³, as at S. Clement, Eastcheap (Jordan, 1713).
- 32 " Fiddle G to d³, as at S. Martin-in-the-Fields (Schreider, 1727).
- 30 " A to d³, as at Danish Chapel, Wellclose Square (added by Avery).
- 29 " { Middle C to e³, as at Dulwich College (England).
 { Fiddle G (no C³) to C³, as at Whitehall Chapel (*Echo* Schmidt, 1672).
- 27 " Middle C to d³, as at Rugby Church (1800).
- 25 " { Middle C to c³, as at Eton College Chapel (1800).
 { Middle D to d³, as at Lincoln Cathedral (*Echo*) (1800).

It will be seen from the above statistics, that the extended basses of the Great and Choir manuals only served to *starve* the Swell organ.

We pass next to a consideration of the evolution of the English pedal-board, which is a matter of considerable interest. Dr. Hopkins was of opinion that the first English organ which had a pedal-board was that built by G. P. England at S. James's, Clerkenwell, in 1790. According to the terms of the original specification, it had "pedals to play by the feet." Pedal-boards had been introduced into Germany some three centuries previous to this date. Avery appears to have added a pedal-board at Westminster Abbey before 1793. In vol. ix. of the *Quarterly Musical Magazine and Review* (for the year 1827), Dr. Edward Hodges, of Bristol, states that : "As usually constructed, the pedals are a set of clumsy pieces of wood, measuring from an inch to an inch and a half in width, and varying in length from a few inches to about two feet. In many instruments they are so short that the foot cannot be placed at length upon any one of them. They are called 'toe-pedals' to distinguish them from 'German pedals.' The latter affording room for the employment of both toe and *heel*, are therefore much more convenient to the performer, and lead to the legitimate (*viz.*, the *legato*) style of organ playing." Dr. Hodges thought that each natural pedal-key ought to have four inches of working room, because he estimated that the average width of an ordinary boot or shoe sole was about three and a half inches, and that half an inch was the least possible

further allowance which could be made in the direction of "working-room." Defining the "working-room" allowed to the foot as the width of the pedal-key itself, plus that of the space on each side of it, and assuming the width of the pedal-key to be an inch, he estimated the proper distance from centre to centre of two adjacent natural pedal-keys to be two and a half inches, but he afterwards reduced this centre-to-centre measurement to two and a quarter inches. Mr. Billingham gives several pedal-key measurements which I here place side by side with those of Dr. Hodges (1827) and the College of Organists (1882):—

	Width of Pedal Key. Inches.	Width from Centre to Centre. Inches.
Dr. Hodges' suggestions (1827)	1	2½ or 2¼
S. Margaret's, Lothbury, ½ octaves of GG pedals (G. P. England, 1801)	1½	2¾
S. James's, Bermondsey, GG pedals (Bishop, 1829)	1⅞	2⅞
S. James's, Clapham, GG pedals (Bishop, 1830)	1⅞	2¾
S. Mary Woolnoth, 2½ octaves, CCC to F (Groves, 1850), and Whitechapel Church, CCC to D (Hill, 1854)	¾	2¾
College of Organists' "resolutions" (1882)...	—	2¾

S. James's, Bermondsey, had the distinction of being the largest GG Pedal organ ever made; it had three stops each of twenty-five pipes (two octaves), viz., *Double* pedal pipes 21½ ft., *Unison* pedal pipes 10¾ ft., and *Trombone* 10¾ ft. We have seen that there were at least two organs with a great manual compass from CCC upwards, viz., S. Paul's Cathedral and S. Mary Redcliffe, Bristol. Both had "pull-down" pedal-keys, but S. Mary's had in addition a "spring of communication" or sub octave coupler, which gave octaves on the pedals. Mr. Leffler adds, "but it has a bad effect."

A single octave of GG "pull-down" pedal-keys would appear to have been the ordinary thing one hundred years ago, but some organs, as those of S. Clement, Eastcheap, S. Michael, Cornhill, and Rochester Cathedral, are described by Mr. Leffler as having pedals up to C (viz., Tenor C), which with a "short-octave" keyboard would mean only fourteen pedal-keys all told. The first step towards the evolution of an independent pedal organ was the introduction of what was called a "drum pedal." This was a single pedal key which, when depressed, admitted wind to certain pipes tuned so as to produce beats resembling the effect of a drum-roll. We have already seen that the largest organ in

England (that at Christ Church, Spitalfields) had a drum pedal of four pipes tuned to C, *i.e.*, there were two pipes tuned to C itself, and two others tuned to the semitone above. The organs of S. Botolph, Aldgate (Harris, 1676), S. Nicholas, Deptford (Schmidt, 1697), and S. John of Wapping, had each a drum pedal tuned to D and the semitone above. Mr. Leffler's references to actual "pedal-pipes" are few and far between. At Westminster Abbey at the beginning of last century there were thirteen open wooden pipes from GGG to GG *unconnected with the key-board*. These were of very large dimensions, and though only unisons with the Diapasons, had by reason of their scale, a tone-quality which produced an effect of deeper pitch.

Although of GG compass, Samuel Green's organ, built under the direction of Joah Bates in 1778 for S. Katherine's-by-the-Tower, had an octave of Open Diapason pedal pipes from CCC, 16 ft. length; this was the organ played upon by Mr. Leffler himself. The organ built by Elliott in 1804 for the Hanover Square Concert Rooms had nineteen large pedal pipes from CC to F#. Elliot added pedals and pedal pipes to Hereford Cathedral organ in 1806. On October 16, 1808, Charles Wesley re-opened the organ at S. George's, Southwark, which then contained one long octave of pedals with separate pipes. We are not informed as to the pitch of these pipes, nor can we assume that they were of 16-ft. tone, since some of the earlier pedal pipes were merely bass continuations of a unison Diapason stop which did not run through on the manual. Thus, at Sevenoaks Parish Church, Avery's organ in 1798 had one of the Great Open Diapasons speaking to Gamut G# on the keys; the lower octave of the same stop had large wooden pipes speaking with the pedals. At S. Anne's, Limehouse, in 1811, the six lowest notes of a new Open Diapason were treated in the same way. The "return pedal pipes," so severely criticised by Dr. Hopkins in his Organ Book, belong to a slightly later period than a century ago. In 1811 Hugh Russell added pedals and large pedal pipes to Hancock's organ in Chelmsford Parish Church. Gray's organ, played upon by Vincent Novello at S. Patrick's Roman Catholic Chapel in Soho Square, had pedals from GGG to FF# with eleven Double Diapason *stopped* pipes of wood; this is perhaps an early use of the Pedal Bourdon, which Mr. Jardine informs me was first called "Double Stopped Diapason." Mr. Jardine also thinks that the scale of the early "pedal pipes" was large to a disagreeable extent; the 16-ft. C pipe was sometimes more than 16 inches square. Mr. Jardine's master, J. C. Bishop, was an excellent maker of pedal pipes. His organ at S. John's, Lambeth, opened by Wm. Horsley, Mus.B. Oxon., on November 3, 1824, had independent pedal pipes of the largest

dimensions, yet they were so admirably voiced as to be properly effective when used as a bass to the softest manual stop.

The first real *Manual "Double"* to which I can find any reference is that in Loosemore's organ in Exeter Cathedral. Originally this stop consisted of fourteen pipes only: these were of metal, and were placed in two separate "towers" of seven pipes each. "At a distance from the organ," writes Mr. Leffler, "this stop is very fine with the Diapasons and Principal: it has no effect alone." To this bass Bridge added a treble in 1740, but, says Mr. Leffler, "the organist [William Jackson?] dislikes the Double Diapason in the treble, and makes use of the Choir for the right hand to accompany its bass played with the left hand." Dr. Hopkins gives the following dimensions of the largest pipe (GGG) of this Double: *circumference*, 3 ft. 11 in.; *diameter*, 1 ft. 3 in.; *length of speaking part*, 20½ ft.; *cubic contents*, 3 hogsheads 8 gallons.

England's Double Diapason in the organ at the Portuguese Chapel, South Street, was of wood and a bass only (2 octaves). On the other hand, the following Doubles did not begin with the lowest note of the keyboard: S. Ann's, Blackfriars (Gray, 1808); S. Margaret's, King's Lynn (rebuilt by Lincoln in 1816). Mr. Jardine considers that the English builders of a century ago erred on the side of large-scaled Diapasons. This was especially the case with Stopped Diapasons, which were very often made of metal. But these old craftsmen were particularly careful in choosing wood for their Stopped Diapasons. Richard Bridge's organ at S. George's-in-the-East (built in 1733) had an *open* Diapason of fifty-two wooden pipes on the *Choir* organ, in addition to a stopped Diapason of wood on each of the three manuals.

Although the *Dulciana* was introduced by Snetzler in his organ at King's Lynn in 1754 (under Dr. Burney's direction), very few Cathedral organs in 1800 could boast of this stop, which was not to be found in the organs of S. Paul's, Westminster Abbey, the Chapel Royal, S. James's, and the Temple Church, even though Mr. Leffler describes the last-named as "the finest organ in London."

It must be admitted that the English organs of a century ago had specifications of a very similar character. An article in the *Quarterly Musical Review* for 1820 states that the stops in common use at that time were "open and stopped diapasons, which are the foundation of the organ; the principal and flute an 8^{va} above the diapasons; the 12th, 15th, tierce, sesquialtera, mixture, and furniture, which are the harmonics of the note to which they belong; the trumpet, a reed stop of the pitch of the diapasons, the clarion an 8^{va} above the diapasons, both used in the full organ; the bassoon,

hautboy, and vox humana, imitative stops of the pitch of the diapasons, and the great cornet, consisting of five ranks of pipes, viz., Stopped Diapason, Principal, 12th, 15th, and tierce, used only as a solo stop."

The flute stops of a century ago were not very varied in character. Mr. Jardine describes them as being mostly *open* flutes. We find, however, the Nason—a *stopped* wooden flute of 4-ft. pitch—in Father Schmidt's organ which he built for the Banqueting Room, Whitehall, in 1660, as well as a metal "Block Flute" of 2-ft. pitch, the pipes of which were several scales larger than those of the Open Diapason. Both the Nason and the Block Flute were to be found in the Great organs at S. Paul's Cathedral and Trinity College, Cambridge; and there was a Nason in Avery's 1804 organs at S. Margaret's, Westminster, and King's College, Cambridge, and a Block Flute in Hugh Russell's 1808 organ at S. Dunstan's, Stepney. The earliest example of a Flageolet stop was that in the Echo of Thomas Schwarbrook's 1716 organ at S. Chad's, Shrewsbury.

The *mixture stops* now claim our attention, and the three kinds just mentioned may be thus briefly defined:—

Sesquialtera was the name originally given to a II.-rank mixture composed of 12th and Tierce. The interval of a 6th between these two ranks gave the name to the stop. In England the name was usually given to a III.-rank mixture stop beginning in the bass with 17th, 19th and 22nd above the unison, *i.e.*, a $\frac{9}{8}$ chord. The *mixture* generally consisted of pipes of smaller dimensions than those of the *Sesquialtera*, beginning with the 26th or compound 5th of the unison. The *furniture* consisted of higher ranks still; but the ranks broke in every octave on account of its longest pipes being so short and small.

Mr. Leffler occasionally complains of what he calls a "noisy chorus," *i.e.*, the ensemble effect of so many mixture ranks sounding together. Rénatus Harris was rather fond of a "noisy chorus." When my organ at S. Clement's, Eastcheap, was rebuilt in 1889, my old master, Dr. Hopkins, advised me to make a clean sweep of all the ranks except three, with the result that the full organ is now bearable. Mr. Leffler particularly objected to Harris's VI. ranks at S. Giles's, Cripplegate, and Byfield's X. ranks at S. Botolph's, Bishopsgate. At S. Paul's, Bedford, he remarked that the Tierce and *Sesquialtera* were of too large a scale, and spoiled the organ in consequence. In some *Sesquialtera* stops he found the number of ranks became less towards the top of the keyboard; thus Harris's III.-rank *Sesquialtera* at Christ Church, Newgate Street, became II. ranks after Treble D, whilst the III.-rank *furniture* in the same organ became II. ranks after Middle C. Hancock's IV.-rank *Sesquialtera* at S. George-the-Martyr,

Queen's Square, became a III.-rank after Gamut G, but this was "a very bad organ all through." There were two Sesquialtera stops, each of *one rank only*, on the Great organ at S. Nicholas's Church, Newcastle-on-Tyne (now the Cathedral), the one running to Middle C as a Larigot, and from thence becoming a 15th, the other running to Middle C as a 22nd and from thence breaking into a Tierce. "Such a division," writes Mr. Leffler, "could only have been made with a view of making a great show of stop-handles." The III.-rank Sesquialtera on Mr. Leffler's own organ at S. Katherine's-by-the-Tower (Green, 1778) is fully described:—

From GG to Middle C: 17th, 19th and 22nd, or the 1st Inversion of a Triad.

From Middle C# to B above: 15th, 17th and 19th, or an Uninverted Triad.

From B to the top: 12th, 15th and 17th, or the 2nd Inversion of a Triad.

But he found fault with Green's II.-rank mixture, which was thus laid out:—

From GG to Tenor F#, 22nd and 24th, *i.e.*, a 3rd.

„ Fiddle G to Treble C, 17th and 22nd, *i.e.*, a 6th.

„ Treble C# to the top, 15th and 17th, *i.e.*, a 3rd.

He thought the mixture would have been better thus:—

From GG to Tenor C, III. ranks, 22nd, 26th, and 29th, *i.e.*, a Triad without a 3rd.

From Tenor C to Middle C, II. ranks, 22nd and 26th, *i.e.*, a fifth,

From Middle C to C above, II. ranks, 12th and 15th, *i.e.*, a fourth.

From Treble C to the top, II. ranks, 8^{ve} and 15th, *i.e.*, an octave.

I have been much interested in comparing this suggestion of Mr. Leffler's with an improvement in mixture composition which was carried out about fifty years later by Mr. Walker, in his organ built for Prestbury Church, Macclesfield, in 1855. A writer in the *Musical World* for April 14th of that year says: "The Great organ Sesquialtera is of IV. ranks; the largest rank being a 15th, and in this order it proceeds to the C on the third treble space; from this point it breaks gradually, until at the F above the four ranks stand thus: Open diapason, principal, 12th and 15th. By this arrangement, the weakest portion of a Great manual is reinforced by pipes of greater gravity and sonority than usually inhabit its mixture work—brilliancy meanwhile being secured by the acute pitch of the notes themselves."

The *Cornet* has already been described as a solo stop. But this was an abuse; the original intention of the *Cornet* was to strengthen the treble of the Full organ. Its range was usually from Middle C or C \sharp to the top of the keyboard, but it was sometimes continued downwards as a *Sesquialtera*, as in the old CC organ by G. P. England's father at All Hallows', London Wall. A V.-rank *Cornet* comprised Stopped Diapason (sometimes Open Diapason), 8 ft.; Principal, 4 ft.; 12th, 2 $\frac{3}{4}$ ft.; 15th, 2 ft.; and Tierce 1 $\frac{3}{4}$ ft. In a IV.-rank *Cornet* the 8-ft. pipes were omitted, and in a III.-rank *Cornet* both 8 and 4-ft. pipes were left out. The *Cornet* stop was quite a complete little organ on its own account; and to render its tone more prominent, its ranks of pipes were sometimes mounted upon a soundboard of their own in a rather elevated position in the interior of the organ. The stop was then called a *Mounted Cornet*. The *Cornet* pipes were of enormous scale, and were voiced with a fluty tone character: they extended throughout their compass without "breaking" like those of an ordinary "compound stop." By the kindness of Mr. Alfred Kirkland I am able to let you hear the tone-quality of a single *Cornet* "rank." I have been told that the quality of some of the better *Cornet* stops had a melancholy, reedy character of tone something like that of a modern orchestral oboe; this may throw a little light upon a remark made by John Marsh—a well-known writer of *Cornet* voluntaries—who in the preface to his collection of such pieces advises the restriction of the *Cornet* to solos in the minor key. Many organs had *Cornet* stops on both Great and Swell manuals. The Swell *Cornet* (which went the whole range of its keyboard) was usually of III. ranks only. Swells like those of S. Sepulchre's, Holborn (1799), and S. George's-in-the-East (Bridge, 1733), each of which possessed a IV.-rank *Cornet*, did not have a separate Principal, that being the lowest rank of the *Cornet*. So recently as 1855 there was a *Cornet* stop on the Swell at S. Andrew's Undershaft. For some reason or another the Swell *Cornet* was the first to disappear. In 1800 the Swell *Cornet* at Christ Church, Newgate Street "drew, but did not speak." In 1802 the Swell *Cornet* at S. George's, Hanover Square, was reduced to a Principal; the three remaining ranks having been taken out by the desire of the organist, Mr. C. Knyvett. But in each of these organs the V.-rank *Cornet* on the Great was suffered to remain. In 1811, however, we find that IV.-ranks of the Great organ *Cornet* were stopped up at Gravesend Parish Church during the organistship of Mr. Killick. "The Stopped Diapason is the only rank that speaks," writes Mr. Leffler, "and the 15th is the only rank that speaks in the Swell *Cornet*; the 12th and Tierce are stopped up." The glory of the *Cornet* was departing!

There is a popular fallacy that before the time of Henry Willis (if not *afterwards*) all *reed stops* by other builders had (or have) that peculiar quality of tone usually associated with the *frying* of sausages. It is therefore somewhat reassuring to be told by Mr. Leffler that in 1799 the reeds in the organ at S. Sepulchre's, Snow Hill, were "extremely good"; and that Byfield's Trumpet on the Great at Magdalen College, Oxford, was "remarkably fine." A writer in the *Musical Standard* for October 15, 1862, describes the Great reeds in Byfield's organ at Doncaster Parish Church (destroyed by fire in the "fifties") as "glorious reeds which blazed forth in beauty and brightness like the rising sun in an eastern clime—every pipe worth its weight in silver." There were two Trumpets and a Clarion in this twelve-stop Great at Doncaster, and the reeds of the Clarion were carried up to the top of its compass. My own organ at S. Clement's, Eastcheap, had two Trumpets on the Swell, added by Jordan in 1713 to the original Great and Choir built by Renatus Harris in 1695.

Undoubtedly *the* reed-stop which was most frequently used for solo purposes a century ago was the *Vox Humana*. We find this stop everywhere, and by no means confined to the Swell. England's two-manual organ at S. Mildred's, Poultry, had a *Vox Humana* on the Great, which remained there until the church was unnecessarily pulled down in 1872. Harris's organ in Cork Cathedral had a *Vox Humana* remaining on the Great in 1805. England's *Vox Humana*, placed by him in the Choir organ at S. Stephen's, Walbrook, remains there to this day in the same instrument, which is now (1907) in the grand old Priory Church of S. Bartholomew, Smithfield. I found it a stop of quite a pleasant tone when I played on it two years ago. Mr. Leffler has the following curious note concerning Jordan's Choir *Vox Humana* at S. Dunstan's-in-the-West: "This stop was taken away in 1805, after having great celebrity in consequence of Mr. Reading having been afflicted with palsy." Harris's organ at S. Botolph, Aldgate, had *two* *Vox Humana* stops on the Choir; one of fifty-two pipes (running throughout), the other of thirty-nine pipes from Tenor C# to the top D. Snetzler's four-stop Choir organ at Chester Cathedral had no reed. To a certain extent, the Choir *Vox Humana* may be said to have been superseded by the Cremona or Krum-horn, which is now generally known as "Clarinet." A Cremona was co-existent with a *Vox Humana* in Harris and Byfield's Swell at S. Mary Redcliffe, Bristol (1726), and in both Choir and Swell of Byfield and Green's organ in Wigan Parish Church, Lancashire (1770).

I have already spoken of the "spring of communication," or sub-octave coupler (as we should call it), which gave octaves on the pedals at S. Mary Redcliffe, Bristol, in 1726.

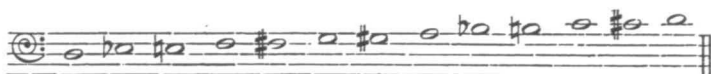
Dr. Hopkins was of opinion that this was the first *coupler* ever made in England. We may safely say that a century ago couplers or "springs of communication" (as they were first called) were rare luxuries. At S. George's, Hanover Square, the pedals pulled down the Choir organ keys; but, adds Mr. Leffler, "there was a stop to make them take the Full (or Great) organ keys in addition." "There is a copula," is mentioned in connection with England's rebuild of Dallam's organ at S. Alphege, Greenwich, in 1803, but its functions are not defined. When we remember that the Great and Choir were invariably the only complete manuals, we must not be surprised to hear of the Choir to Great coupler before we find any mention of Swell to Great. Choir to Great couplers existed in Snetzler's organ in the German Lutheran Chapel, Savoy; in Avery's organ at S. Margaret's, Westminster, 1804; and in Elliott's organ at All Saints', Derby, in 1807. The Father Schmidt organ at S. Giles-in-the-Fields, which Mr. Billingham describes in 1856 as remaining "very much in its original state," had *then* three couplers, Swell to Great, Great to Pedal, and Choir to Pedal, but I have no evidence of when these were added.

Organists of a hundred years ago are to be congratulated upon the fact that the word "stop-control" was not then invented: they enjoyed the manipulation of their stops with little or no mechanical aid. Their registering was wholly eclectic. In 1809 J. C. Bishop invented *Composition pedals*, which took the place of the "shifting movement" invented by Ralph Dallam and introduced by him into his one-manual organ at S. George's Chapel, Windsor, about the year 1661, where there were two pedals, one of which reduced the Full organ to the Diapasons and Principal, the other to the Diapasons alone. The only "shifting movement" I have ever seen was in an old organ built by a son-in-law of G. P. England for the Parish Church of Midsomer Norton, near Bath, where—in his early days—the late Dr. E. G. Monk (of York) was organist. This movement acted in very much the same manner as the French "ventil system," by cutting off the wind from certain stops.

In the *Harmonicon* for 1824, a correspondent stated that the *pitch* of the organ in S. Paul's Cathedral was then a semitone above the usual standard. Mr. Leffler makes a note to the same effect, and adds that the organ in S. Paul's, Bedford, was tuned three-quarters of a tone too sharp. Writing in 1855, Dr. E. J. Hopkins observed that the organ pitch had within three centuries varied to the extent of two tones; that there had been at different times three distinct pitches, the oldest being the *highest*, and that in use at the beginning of the 18th century the *lowest*. The pitch when he wrote was about midway between the extreme high and

low pitches of former times—being as nearly as possible identical with that of Father Schmidt, whose pitch was as a rule higher than that of Renatus Harris.

English organs of a century ago were all tuned to *unequal temperament*. In a paper "A Parting of the Ways," which I read at a meeting of musicians held at Buxton in January last, I pointed out that the unequal system of temperament may have been the result of transposing the Ecclesiastical Modes to the melodic range of the First or Dorian Mode D to D, that being a conveniently pitched compass for male voices generally. At any rate, the fusion of the Dorian, Phrygian, and Lydian Modes into the one common range of D to D produces the actual chromatic formula of unequal temperament:—



By this system of tuning, some of the 5ths and 3rds were made nearly accurate; so that the easier and more frequently used keys (C, G, D, A, F and B♭) were made to approximate the purity of just intonation by throwing the error into keys with signatures of more than three sharps or two flats. In his Organ Book, Dr. Hopkins points out that steps were taken here and there to get rid of the "wolf" caused by this "error." Father Schmidt (probably aided and advised by Henry Purcell) introduced two additional keys (A♯ and D♯) into every octave of the organ at the Temple Church. In 1759 the organ said to have been presented by Handel to the Foundling Hospital had two further additional tones in each octave (viz., D♭ and A♯), and about the year 1808 a Mr. Hawkes took out a patent for obtaining two distinct sounds from the only remaining black key (F♯ and G♭). Equal temperament (which consists in dividing each octave into twelve precisely equal semitones) came into use in Germany before it was introduced into France. Two of its earliest advocates in England were Dr. Crotch and Samuel Wesley the elder. It is therefore an extraordinary circumstance that a son of the latter (Dr. Samuel Sebastian Wesley) should have remained all his life an adherent of unequal tuning. He refused to admit that J. S. Bach's "well-tempered Clavier" was an argument in favour of equal tuning for organs, because the immortal "48" were not composed for the organ; and that, further, Bach almost invariably wrote his *organ* music in the keys best suited for unequal tuning. In a letter dated June 24th, 1863, Dr. Wesley discounts his father's advocacy for equal tuning, because the latter had never heard it! and excuses his own predilection

for the "wolfish" key of E major in his church music on the ground that his musical thoughts were so influenced by the voice parts, that he disregarded the organ tuning. Dr. Wesley attributed the progress of equal tuning in this country to the influence exercised by the writings of Seidel, Rimbault and Hopkins.

A century ago there were no mechanical appliances for lightening the touch. The first organ builder who appears to have conceived the idea of making *helpful use* of the force of wind resistance was Joseph Booth, of Wakefield, who in 1827 attached small circular bellows (which he called "puff-valves") to the pull-downs of the pallets belonging to the lowest notes of a wood Open Diapason of a GG manual at Attercliffe, near Sheffield. This was followed shortly after by Barker's invention of the pneumatic lever.

The blowing was entirely done by hand, the larger organs having two or more blowing levers. The first instance I can find of blowing by water power is that mentioned in the *Musical World* for April 25th, 1857, viz., a "hydro-pneumatic engine" affixed to the organ in East Parade Chapel, Leeds, by a Mr. Holt. Mr. Leffler only mentions wind appliances once, and that is in connection with Harris and Byfield's organ at S. Mary Tower, Ipswich, where there was a stop called "Spiramen," which, when drawn, let the wind *out* of the bellows. It is to be hoped that this "stop" was under the sole control of the organist.

The external appearance of the organs of a century ago was often as similar as their internal contents. Mr. Leffler observes that the following case-designs were identical: Chichester Cathedral and S. Sepulchre's, Snow Hill (both by Renatus Harris); the same master-builder duplicated his case-design at Ely Cathedral and S. Andrew's, Holborn. Renatus Harris may also be claimed as the builder of the organ at S. Nicholas, Newcastle-on-Tyne (now the Cathedral), because the instrument had a front like that of S. Sepulchre's, Snow Hill, and a back like that of S. Andrew's, Holborn. Avery duplicated his cases at the parish churches of Croydon and Sevenoaks, and also at S. Margaret's, Westminster, and Christ Church, Bath. John Harris's case-design for S. John's Chapel, Bedford Row (1703)—the organ upon which Dr. Worgan used to play—was so much admired by Byfield (Harris's partner and successor), as to be reproduced later on in the eighteenth century at the parish churches of Grantham (1736) and Doncaster. Snetzler repeated a case-design at four different places: S. Mary's, Nottingham, S. Martin's, Leicester, the German Chapel Royal, Savoy, and S. Mary's, Huntingdon. Gray duplicated a case at S. Anne's, Soho (1795), and at S. Paul's, Covent Garden (1798). The only instance in which I can find an organ

builder imitating a case-design by some one else, is that of S. Luke's, Old Street, which Bridge in 1733 appears to have copied from Harris and Byfield's design for S. Mary's, Shrewsbury, in 1729.

These old case-designs were not without considerable artistic merit; the show-pipes being effectively grouped in "towers" and "flats," with the corbels of the towers and other portions of the case enriched with excellent carving. Fifty years later it was the fashion of the times to give the organ as ugly an appearance as could well be contrived, by making it look like a row of unadorned stove-pipes planted on the top of the meanest possible wainscot. From this miserable state of things we are happily beginning to emerge, thanks mainly to the cultured taste of organ builders like Messrs. Hill and Son. There is no reason why an organ should be offensive to the *eye* as well as to the *ear*. It is a monstrous shame that an organ builder should be turned loose in the aisles of a mediæval cathedral, and be allowed to spoil the architectural beauty of an ancient building to the extent of the disfigurement which the late Henry Willis inflicted upon the north-west transept of Salisbury Cathedral with his hideous 32-ft. metal pedal pipes, &c. That these enormously overgrown modern organs offend the *ear* by their wasteful extravagance as much as they torture the *eye*, there can be no doubt. More than sixty years ago the late Rev. Canon Jebb, writing in 1843, said, "I must avow an utter distaste for these enormous music-mills. Their barbarous crash is more fit for Nebuchadnezzar's festival than for that sweet and grave *accompaniment* for which our old Cathedral organs were fully sufficient. Modern instruments may have gained in *loudness*, but have certainly lost in sweetness and equality of tone. The English Cathedral organ, it must be remembered, is intended to be *an accompaniment of a choir*, and is not a vehicle for Voluntaries and Concertos, as abroad, where its choral use is generally subordinate." With this opinion of a learned and cultured ecclesiastic who was well skilled and versed in music, I conclude a paper which, although mainly archæological, may yet, I venture to hope, have some practical bearing upon present-day errors and difficulties by inviting criticism of a prospective as well as of a retrospective character.

DISCUSSION.

THE CHAIRMAN—We are all greatly indebted to Dr. Pearce for the great amount of industry he has displayed in bringing these important facts together. It is difficult to deal with the points raised on a single hearing; the full consideration of them must be left till we can have the advantage of seeing the lecture in print, which I hope will soon be possible. I am deeply interested in the lecture because some of it takes me back to my early life. This illustration of the organ that used to be in Cheshunt evidently shows that the case has been considerably altered; when I knew it sixty years ago the ugly upper part did not exist. Then with regard to the nag's head swell, I well remember when I was a boy being sent to play at a chapel in Long Acre. The organ had formerly stood in the Chapel Royal, St. James's. I found the swell pedal was very large and very heavy to put down, and, as I was only a child, I am sorry to say that in the middle of a very interesting part of the service my foot slipped and down came the shutter, and I thought the roof of the chapel had fallen in. Then I remember the toe-pedals; I have played on them more than once, and very comical they were. The use of pedals in this country is a very modern thing indeed. A large number of organists of my young days knew very little about them. There was a story that Sir George Smart, who was on the Music Jury at the Exhibition of 1851, when asked to try one of the organs that was furnished with pedals, replied, "My dear sir, I never played on a gridiron in my life." And I believe he never did. The drum pedal I never saw, but it is certainly interesting. Possibly it accounts for a practice followed by organists in my time for the close of a piece; they used to hold down two adjacent pedals, say G and F sharp, simultaneously. I wonder whether that was a survival of the drum pedal. In 1842, when I went to the Temple as a choir-boy, the organ had been removed from the centre, under the arch, to the side, where it now stands; but so far as I remember there was then no pedal. This is strongly impressed on my memory by a practice of the organist of the time, who was not Dr. Hopkins, but Mr. Warne, a blind man. At that time we sat upstairs, not downstairs as the choir does now; and I remember seeing him lift his leg and hold down a bass note with the knee-bone. I remember the introduction of the first pedal stop into the Temple. That stop was so tremendous in its effect that it used to shake the spectacles on the noses of the Benchers, and therefore they thought it was a magnificent stop—but we poor singers did not. I have often wondered how, our

forefathers could have borne so much mixture and sesquialtera. I wonder it did not drive them out of the churches. But then I think of some of the sounds we stand nowadays; and I can only suppose that each generation is tempered to the particular wind that blows. I believe there is still a mounted cornet in the chapel at Dulwich College. I have seen it many years ago, and I hope it is there now. I am always very sorry when these things are destroyed. I am very glad that the organ at Mount St. Michael's has passed into the hands of Mr. Casson, who has sufficient reverence not to alter it. Some of the cruellest things which our repairers ever did was when they cut the organs off from CCC to CC and from GG and FF to CC. If they had left them alone, there was already a magnificent Pedal organ. But they cut off the whole of these notes, and then they presented the organist with a pedal keyboard with a single stop in its place. This stop was called Bourdon; and it was indeed a bourdon. I have enjoyed this paper immensely, and now invite you to add anything in the way of criticism or information that may occur to you. But I have first to thank Dr. Pearce very heartily; we could not have had anything more interesting or more admirable.

Dr. PEARCE—I have a few old Father Smith pipes, which I shall be pleased for you to hear—also one old reed pipe.

Mr. CASSON—I prepared a few words with regard to old organs in order to show that the modern in several most important respects falls short of the excellence of the old one. In whatever terms of ridicule you may speak of the old English organ there are matters in which it can give points to the modern organ. In nothing is the incapacity of the modern builder more conspicuously shown than in the wasteful way in which he has treated his Pedal organ and the mechanism for controlling it and its couplers. A properly-equipped CC organ is of course superior to any long-manual organ. But in England it never is properly equipped, especially in regard to the pedal basses, including those for the swell. The old English organ had true basses for its manual stops, at whatever cost, as has also the German organ; but it is only from the muddle which followed the alteration from the long manual that the modern English builder has evolved his stupid and brutal machine. As regards the cornet, there were no doubt such stops as have been shown to us; but I have met with them, as in the remains of Green's organ at Nayland, in such form as closely to resemble in tone the modern orchestral oboe. Another thing I would remark on is the emasculation of the organ by the omission of proper mutation and chorus work. It is a modern craze totally at variance with the teaching of Hopkins, Best, and other artists. The mutation stops impart a certain roundness and

fulness to the general organ-tone by filling up some of the bare octave sounds of the foundation stops by the mixture therewith of certain intermediate harmonic sounds of fixed and determinate pitches. They have also the further effect of binding together the extreme sounds of the compound stops, and the unison and double stops; and of blending the whole together into one great mass of musical sound.

Mr. WEDGWOOD—First of all I should like to express my great appreciation of Dr. Pearce's lecture. It is a perfect mine of information. It has been most interesting to me, as it has proved, I am sure, to everybody here present. With regard to the manual bass and the question of "long manuals," I cannot think it is a good thing that the bass should be drawn from a similar quality of tone to the manual stop in use. Supposing we are playing on a gamba, I do not think the right quality of tone for the bass is a violone or contra-gamba; a stop of flute tone, such as a bourdon, makes the manual tone sound much better by contrast. Dr. Pearce's remarks on the cornet were of interest. I have had the pleasure of hearing Silbermann's cornets at Dresden and Strassburg, and they certainly made all the difference to the ensemble effect of those instruments. They welded the tone together into one glowing mass. There is a queer old organ at Mayence Cathedral, with several stops enclosed in what is one of the very few surviving instances of the old echo-box, unprovided with any facilities for opening it to let the tone out more strongly. As to the pneumatic lever, which has so transformed organ-building, I have a certain amount of evidence that Barker's invention was anticipated by Hamilton, of Edinburgh. At any rate, Barker's lever was submitted to Dr. Camidge, of York, and I have it on the evidence of Dr. Camidge's son, Mr. Thomas Simpson Camidge, who is still living, that it proved a gigantic failure, for which reason it was not adopted at York. About the same time Hamilton arrived at the idea independently, and employed his lever in an Edinburgh organ with such excellent results that it remained in use till a few years ago. With regard to Dr. Pearce's quotation of somebody's glowing description of early English reed-tone, we must recollect that the standard of appreciation of reed-tone was not then quite the same as it is now. This is evident from the way in which oboes were used in Handel's works. Changes do take place in our power of appreciation in different ages. We have it on record that the sixth or seventh century organ sent from the East to Aix-la-Chapelle so impressed one good lady that she forthwith expired from the effects of hearing its beauty and softness of tone. I do not know that it would strike many of us in the same way nowadays! Personally, I think that the old reeds are very gimcrack, and cannot believe, from

their very mode of construction, that they were ever anything else.

THE CHAIRMAN—We must bear in mind the difference between cornets. Here it was used as a solo stop.

MR. WEDGWOOD—But I think it was also used as an accompaniment.

MR. CASSON—What Mr. Wedgwood stated about the pedal bass is distinctly in opposition to Dr. Hopkins. He says "In Germany also the CCC, or 16-ft. range, is viewed as the most correct one for the organ stops, even more generally so than in England, but not for the organ manuals. The *pedal* is justly considered as the only proper place for the *bass*. This is conclusively shown in German specifications, where may frequently be seen disposed to a 'principal 8 ft.' on the manual a 'principal bass 16 ft.' on the pedal; to the 'octave 4 ft.' on the manual an 'octave bass 8 ft.' on the pedal; to the 'flöte 4 ft.' on the manual a 'flöte bass 8 ft.' on the pedal; to a 'quint 5½ ft.' on the manual a 'quinten bass 10¾ ft.' on the pedal; and so on."

MR. H. H. STATHAM—I have a recollection of an old organ with a mounted cornet, and of playing on it a concerto of Handel's period—I cannot remember whether it was actually Handel's or not—with a number of solos marked "cornet," and I had the pleasure of playing that as it was intended to sound, with accompaniment on the lower keyboard. It was interesting historically, but not musically. Another thing I have been reminded of is the first organ on which I ever accompanied the Church Service, which was one with an EEE compass. It was at St. George's, Everton, near Liverpool, put up under the direction of Dr. Camidge. I was told Dr. Camidge was not very brilliant on the pedals, but very brilliant with the left hand. On the Swell there was a Cremona of quite a different character from that stop of the present day. The builders were Bewsher & Fleetwood, a firm of some reputation in their day. When I was at school one of my schoolfellows boasted of a chamber organ by England. It was an organ of six stops, three on each manual, and the whole encased in an outside swell—a rising glazed shutter. Some remarks were made on the very few couplers on old organs. Was not that an escape from temptation? Is there not too much use of couplers now? Surely the manuals were made for contrast of tone. Then with regard to the cases of old organs, many of them were very fine, and if modern builders repeated them, I do not think it is to be regretted. In regard to the size of cathedral organs, it seems to have been suggested that the organ is required chiefly to accompany the voices, but surely there is something to be said for the "out-voluntary" after the service. The want of what used to be called the

"chorus" in some modern organs is a serious defect. I saw the specification of the organ of Giggleswick School Chapel; the Great organ with the usual combination up to the 15th (including an harmonic flute), and then a trumpet, and nothing else. I think the tone of that must be exceedingly hard and commonplace in comparison with the old organ. The mixture may be shown theoretically to be illogical, but the effect proves that it is the right thing, if there is not too much of it. It produces in the full organ that special organ tone which nothing will adequately replace, and I think the tendency to do without it is a serious mistake.

Mr. MUNRO DAVISON—When I was a boy I played at Christ Church, Spitalfields, where there was a very interesting specimen of an organ with pedals, from low D to the top D. There was a diapason right down to the bottom, the rest stopped at bass G.

Mr. CONRATH—Besides the so-called nag's head swell, some old organs had a gridiron swell, consisting of two frames sliding one behind the other, similar to the sliding ventilators used in railway carriages. I believe that the old organ at St. Magnus, London Bridge, was fitted in this manner. In some old G organs, built by the late Mr. J. C. Bishop, CCC pedals were provided, and he introduced two couplers, viz., CC to pedals and GG to pedals, thus utilizing the lower notes on the manuals. An example existed at St. Mark's Church, North Audley Street, Grosvenor Square, where the late Dr. Pole used to play, and he presented a mixture stop to this organ consisting of 3 ranks (12th, 15th and 22nd), which fact is recorded on a brass plate on the jamb and near the stop knob. I think it is a great pity that more of the beautiful old organ cases were not retained when the instruments have been rebuilt; the charming carved mahogany case in 15th century style from St. Mildred's, Poultry, was erected in a modern church at Tottenham with which it was very much out of harmony, and was eventually sold to an antique dealer in Wardour Street and converted into a chimney piece; also the old case (undoubtedly the work of Grinling Gibbons), said to have been originally in Westminster Abbey, but latterly in Barnsbury Chapel, Islington, has now been made into a china cabinet. It would be interesting to know the reason for some old organs having keys with black naturals and white sharps; there is still one of the kind at St. Leonard's Church, Shoreditch, London, and I saw one also at a church near Creuznach, in Germany. I hope some of these old keyboards will be preserved in glass cases as curiosities, either in the vestries of their respective churches or in the local museums. The very fine old case at St. Stephen's, Walbrook, still remains, but with new front pipes, and this example could well be followed, because

although old metal pipes become so soft that new ones must be supplied, the old woodwork could still be utilized with advantage.

THE CHAIRMAN—I remember the organist of Exeter College telling us that the reason why they had black keys instead of white was that the cathedral was not heated, and that the black keys felt warmer than white. That was certainly in accordance with a physical fact.

Dr. SOUTHGATE—I should like to point out that the black naturals are not so uncommon even now. I remember seeing them in the cathedral at Freiburg; if I recollect rightly the stops in this organ are not pulled out but made to slide on one side. As to some of the old stops being so offensive to us, the question of tone is one of education. I do not think we could now bear the oboes of Handel's orchestra, but people were then used to these coarse reeds, and I suppose they did not mind the mounted cornet stops. I have a book of voluntaries made for the Chapel Royal about 150 years ago, and there are several pieces with this stop direction written specially distinctly over them. I was rather surprised to hear Mr. Wedgwood talk about the balance of tone for the lower part of the music. I understand him to mean that the bass required a different quality of tone from that of the rest of the parts. That is very extraordinary. It would be like having a bassoon in place of the 'cello in a quartet of Mozart and other writers. As to the old carving, I suppose there must be an end of all these things. I would rather see them made into cabinets than burned. I remember dear old Dr. Longhurst, of Canterbury, showing me some from the ancient organ case that he had got made into picture frames. There is a useful adaptation on a humbler scale in Sir Frederick Bridge's house. He has had the baluster rails of Purcell's old house cut in two and used for the doors of his music cabinet.

Dr. PEARCE.—I am sure I thank you for the kind attention you have given me. I must apologize for the length of the paper, but it was impossible to compress it into less time. It interested me enormously to write it, and I am sure from the kind and patient way you have listened that it must have interested you.

Dr. SOUTHGATE.—It may be of interest to you to hear that Miss Willmott, who is here this afternoon, has an organ of three stops in playable condition.

After the meeting Dr. Pearce showed the specimens he had brought to illustrate the lectures.